University News

MONDAY, OCTOBER 5, 1987 Rs. 1.5

Open Letter from UGC Chairman

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CD-ROM
Application to University Libraries

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Indian Educational Scene

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Research Grants

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INSA Bursary Grant

CLASSIFIED ADVERTISEMENTS

ANNAMALAI UNIVERSITY
ANNAMALAINAGAR
Notification No 11/87

Applications are invited for the following posts in various faculties of this University.

Sl. No.	Name of the Post	No. of Post
	Faculty of Agriculture	
1.	Professor of Horticulture	1
2.	Professor of Agricultural Botany	1
3.	Reader in Agricultural Chemistry	1
4.	Reader in Plant Pathology	1
	Faculty of Engineering & Technology	
5.	Reader in Chemistry	1
	Faculty of Arts	
6.	Lecturer in Population Studies	2
7.	Lecturer in Political Science	1

Qualifications

For Sl. No. 1

A person with Ph.D. in Horticulture with specialisation in Pomology with ten years of experience in teaching research.

Sl. No. 2

A person with Ph.D. in Plant Breeding with ten years of experience in Teaching/Research.

For Sl. No. 3 & 4

A person with Ph D. degree with five years of experience in Teaching, Research in the subject concerned.

For Sl. No. 5

A person with good academic record with a Doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) Production of teaching materials.

About five years of experience of teaching and/or research provided that atleast three of these years were as Lecturer/or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding research work.

For Sl. No. 6 & 7

(a) A person with a Doctor's degree or research work of an equally high standard, and

(b) good academic record with atleast second class Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

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Lecturer : Rs. 700-40-1100-50-1600 with admissible allowances.

These scales of pay will be revised on the basis of the recommendations of UGC shortly.

Candidates invited for interview for the post of Professor will be paid a single first class to and fro railway fare and for the post of Reader a single second class railway fare.

Those who are in service should route their applications through proper channel.

Application forms can be had from the undersigned on payment of Rs. 10/- by Cash Money Order/Postal Order (not refundable). Filled in applications (with 5 additional copies) should reach the undersigned on or before 19.10.87.

R. Rajamanickam
REGISTRAR

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UNIVERSITY
NEWS

VOL. XXV OCTOBER 5
No. 40 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

IN THIS ISSUE

CD-ROM Application to University Libraries
Indian Educational Scene 3
An Open Letter to Fellow Academics 7

News from Universities

North Zone Adult Education Conference 10
Management Techniques for Information Handling 11
US Assistance for IIT Projects 11
INSA Bursary Grant 11
MSc Course for Teachers 12

Agriculture

Farm Research & National Progress 12
World Food Award for Swaminathan 12

News from Abroad

Research Grants for Chemistry 13
Current Documentation in Education 15
Theses of the Month 16

Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

Editor:
SUTINDER SINGH

CD-ROM
Application to University Libraries

T.K.S. Iyengar*

The introduction of the CD-ROM (Compact Disk, Read Only Memory) is the best thing to happen to libraries. Compact disks are being offered as a means of solving information access and storage problems. Data base producers are providing segments of their data on DC-ROM either directly or through suppliers such as DATEXT or Silver Platter. Disclosure is one of the first data base producers to make their information available on DC-ROM in a form that will appeal to both the experienced online searcher and to the first time user.

The actual impact of technology is complex and often very different from what was predicted; for every example of a positive consequence, there are negative concerns. Physicist Niels Bohr once said, "It is difficult to predict; especially about the future".

For librarians or information scientists, on the other hand, working with evolving technologies is not a new experience. In the 25 centuries of their history, libraries have always adapted to technology, and in more recent times, even pioneered it. Developments of SDI data bases are the right examples. Actually it has created opening for other professions to enter into this profession.

Viewed through the eyes of an information scientist, libraries have gone through a rising and falling pattern of influence largely in response to change in information technology. As long as books were expensive artefacts, libraries were crucial to the preservation and transmission of knowledge. The reader had to come to the book. Surprisingly, the invention of the printing press was a mixed blessing. It cheapened the cost of books enormously and made it possible for readers to have private libraries and for books to be sold and bought as ordinary objects. In part, libraries lost strategic place. This lasted as long as the number of writers and readers remained modest, especially the latter.

With increased writing for publication, particularly of things with lasting value such as science and philosophy, libraries became crucial again, more so because they organised knowledge than stored it. When the spread of literacy greatly increased the number of readers, popular libraries made it possible for the masses to share books too expensive for individuals.

Information Support Centres

The library of the not-too-distant future will be an information support centre. It will not be a museum or archives sitting out the print era where collecting is an end in itself. Librarians have long been undervalued, their work treated as routine and their skills unrecognised and underutilised The image and salary of librarians suffer.

In future expert systems, leading edge of the new information technologies, offer librarians an exciting area in which to carry on their profession to a higher level of achievement and recognition. The simplest way to imagine the demands users may make, and the response of the

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information system is to briefly show how information will be accessed during, for example, research and publishing activities in the new age. Information searching techniques have developed.

The selection, sorting and organisation of relevant information is a special process. This is called SDI or Selective Dissemination of Information.

SDI is done by an automated storage and retrieval method with the aid of a computer. Improvement of scientific communication is sought through this method of machine-assisted dissemination to seek new information. This service system is characterised by a vocabulary or pattern of key words. This pattern is then compared with the vocabularies or profiles characterising each participant of the service. If a given degree of similarity exists between the two, the affected participants are notified by an abstract.

The recipient signifies whether the information is in fact relevant or not by returning a stub provided with the abstract. His affirmative response, which may include his request for a copy of the document is reflected on his profile by incorporating the pattern of the accepted item. Profiles are kept current by discarding patterns after they have reached a certain age. The feedback includes notification of authors as to the reception of their work,

New Professional Role

The influence of technology has also been in how we do our work in what we do. In other words, we have tended to think in terms of discrete changes in our work perhaps requiring specific training but not a rethinking of our functions or of our place in the larger knowledge system and information society.

The computer, complemented by other technologies, such as video-discs, telecommunications and high-resolution graphics, constitutes an entity that can be labelled as 'information machine.' Just as automobiles have various options and come in a range of sizes and prices, so do information machines.

CD-ROM

CD-ROM represents an exciting breakthrough in information storage technology. It is a new publishing medium, the centre of a new genre of computer applications and an educational tool of unprecedented power. CD-ROM is the first practical product to enable almost any company to package and sell and anyone to buy and directly use, very large digital data bases.

Each CD-ROM disc can carry at least 550 megabytes of digital data, with accuracy and reliability as good as those available with the best computer peripherals. This is enough to hold :

- The text content of 150,000 printed pages (enough to fill 250 big books);
- Sharp images of 15,000 pages of business documents (enough to fill two filing cabinets);
- The contents of 1,200 standard 5.25-inch floppy disks;
- A crisp colour picture and 10 seconds of narration for each of 3,000 segments of an educational or reference programme (almost 8 hours of content);
- Large amounts of anything else which can be represented digitally; or any combination, in any proportion and order, of any of the above.

Capacity is just beginning. Any piece of this vast array of information can be located within one second of asking for it. Retrieval can be supported by your choice of power computer methods, starting with data base management systems and full-text searching systems. Precompiled indexes for either or both of these can be stored on the CD-ROM along with the data base itself.

For the librarians, the CD-ROM (compact disk-read only memory) open breathtaking possibilities. For now at least, the mechanics of access, transmission, reproduction and pricing are, in principle, solved The focus of librarians can return to the information itself—the message rather than the medium—if that distinction is still possible.

A CD-ROM disc is 120mm (about 4.72 inches) in diameter, 1.2mm thick and has a hole 15mm across in the centre. For example, when CD-ROM delivers main frame-sized databases to desk tops, some mainframe-like issues arise. Information providers may choose to regulate success.

Information professionals and library patrons want and need different features from online catalogues. Patrons need systems that are intuitively easy to learn and easy to use. They do not need many features

INDIAN EDUCATIONAL SCENE
A FEW RANDOM THOUGHTS

Joginder Kaushal*

It is a happy sign that for the first time, after forty years of independence, a concentrated attention is being paid to education. Prime Minister Rajiv Gandhi's pointed reference to setting up of the Open University and delinking jobs from degrees in his first policy statement symbolises the nation's concern for putting our system of education on the rails. As promised, the Govt. of India subsequently set up Indira Gandhi National Open University (IGNOU) which is the most prestigious seat of higher learning through distance education and is most likely to monitor distance education in Indian Universities.

It is a truism that our universities are, year by year, adding to the ranks of the unemployed "A hungry man is an angry man" goes the old adage, but if this hungry man also happens to have a degree of enlightenment that education brings, he can pose a great danger to the society at large, as is the situation today. It is right time, therefore, for us to turn to education with a surer command over our policies and planning.

Teaching-Learning Arrangement

Ever since the dawn of creation teaching-learning as an occupation has been going on, in one form or the other. The arrangement that operates today in our educational institutions, I am afraid, is not what it should be. Second hand knowledge collected from here and there is drilled down the minds of young students, it is a mere imparting of information. Teaching-learning is a bi-polar process and interaction between two minds, the comparatively full mind operating on a relatively fresh mind. Teaching is supposed to be a nation building activity. Nations are not known for their sky scrapers, ICBMS, nuclear and thermonuclear weapons, their jet airliners or a vast array of luxury gadgets alone but they are more known by the quality of minds of its citizens.

Learning in order to be worth something has four distinct levels :

(i) autonomous level;
(ii) memory level;
(iii) cognitive, assimilative or understanding level;
(iv) reflective level

As to the first, it is self-explanatory. Great Gurus, renowned philosophers like Arvind, noted writers like Shakespeare and Tagore never had formal degrees and yet their utterances have revolutionised the world. At best what can be said about them is that their **kundalini** was awake right from the basal to **Sahansra chakara** level so that after having risen to the super conscious state, they set out to change the face of the world. Any further elaboration of it is outside the scope of this paper. Memory level is an ordinary level where a student crams up his course material and manages to get a pass It is the third and the fourth levels—understanding and reflective—which are the highest levels of learning No learning can be possible without teaching which must be sufficiently effective to see the learner operate at these levels Let us not forget that of all jobs in the world, teaching is, perhaps, the most difficult because teacher in the classroom is addressing a crowd, belonging to different socio-economic backgrounds, mental and emotional makeups and diverse kinds of life experiences Apparently sitting in a classroom the learners do present the semblance of oneness: they are motivated by a common purpose; they have a common place to sit, in pursuit of common goals, but in reality each one of them happens to be an island unto himself, "plurality of solitude" as Jean Paul Sartre, the existentialist philosopher would call it.

It is this island which a teacher is called upon to make an integral part of the continent, a nation. But unfortunately instead of doing that we are sending them out with degrees in hands, each an island unto himself What we are producing is public not a people. Melville, the famous American novelist, defines the two; for him public was a monster with its head that of a Jack ass, its body that of a baboon and its tail that of a scorpion. People on the other hand are those who are endowed with a "unified national consciousness". It is unfortunate that our education has not imparted this unified national consciousness to us that is why we are Assamese, Bengalis, Madrasis or Punjabis first and Indians later. Apart from teaching them their syllabi,

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courses of reading, etc., teaching-learning process is also to make them better citizens which unfortunately has not been done if we look to the rampant corruption in all walks of life around us. How come that Japan which was completely annihitated around the dates we got our independence i e. in forties is today one of the leading nations of the world in terms of science and technology. Her per capita income of $20 in 1945 shot up to $12000 in 1981 and is till on the increase. This is not to deny the progress we have registered in a few fields. We have built up modern civilization, but have thrown all our values down the drain.

Teachers' Training

There is no denying the fact that first rate quality of education can be imparted by first rate teachers. Education Commission set up by the Government of India about 20 years ago, in its recommendations sounded a clarion call, "investment in teacher education", said the Commission, "can yield rich dividends because the financial resources required are small when measured against the resulting improvements in education of millions". It is rather painful to see that there is no satisfactory arrangement for pre-service and in-service training of teachers, both at the elementary level and the secondary level. There is absolutely no arrangement for this training at the college and the University levels. Fresh from the colleges and Universities, the students straight enter the classrooms in the colleges and the universities as teachers. And in a large number of cases they make a mess of it, if they don't have the necessary makings of a teacher in them. The situation as it operates today is that people just drift into this profession without basic pre-requisites, proclivities, leanings, personality, expression in the case of teachers teaching in the schools or colleges or without mastery over the written word if they have to teach in schools of correspondence education. It is very necessary that a competent teacher must be spotted out immediately after the 10+2 level and then training given to him so that he is thoroughly equipped to cope with newer technologies and expertise which are characteristics of the present day system of education. It may be recalled that the National Policy on Education 1986, duly adopted by the Government of India, recommended that :

(a) the emolument and other service conditions of the teachers should be adequate.

(b) Teachers' academic freedom to pursue and publish independent studies and researches, to speak and write about significant national and international issues should be protected.

(c) In-service teachers' education should recevie adequate attention.

Whereas there has been a marked difference between their emoluments and service conditions, adequate academic freedom and in-service teachers training have not been given to teachers as was the intention of the National Policy on Education. There has taken place an explosion of knowledge. Yesterday's theories have become outdated today. Thus re-education or continuing education of teachers is essential. Syllabi, curriculum and courses of reading have got to be updated. The teacher has to keep himself academically alive and up-to-date.

All this presupposes that adequate financial resources must be placed at the disposal of all schools, colleges and universities, schools in particular should try to buy latest journals and other writing-material which in itself may not mean anything unless teachers are strongly motivated

Naturally this obviates a judicious selection of teachers They should be recruited on purely academic considerations. I have already touched this point in the beginning saying that teachers ought to be spotted out at the end of the 10+2 level and so trained that they can make use of countless teaching techniques, employed these days such as simulation, in-basket, micro-teaching techniques, etc.

I suggest the formation of a task force of teachers on the pattern of bare foot doctors These teachers should be dynamic and of a high voltage. They should be put on errands, always on the move, sort of itinerant teachers like we have Visiting Professors in our Universities. It is necessary that this pick and cream of the teaching community will be given adequate protection against their being elbowed out by mediocrities. A top grade teacher here is a top grade teacher at any place. Such an exchange of teachers apart from providing necessary inspiration to students will also perhaps further the cause of national integration which is woefully lacking in our country today. Educational Television (ETV) if pressed into service and an independent channel provided for educational purposes can be a substitute for this kind of itinerary movement, though not a very stable substitute. This observation is based on the assumption that those you like, you want to see and those you want to see you want to be face to face with

Examination Reforms

Our examination system, a legacy of the British, still continues to be as it was handed down to us by our alien masters. A select body of competent educationists debated a few months back in my University the possibility of introducing 100% internal evaluation in order to avoid the pitfalls of our examination system. Perhaps it will not be in good taste for me to spell out what I have seen for myself going on in the Examination centres. Whenever I get a chance to inspect an examination centre, I come back shocked I will not say for fear of being dubbed as a traitor that copying in the examination centres takes place not without the connivance of the supervisory staff which it is a matter of agony to observe belongs to the fraternity of teachers. Perhaps it was to ward off such vagaries that eminent educationists advocated the introduction of 100% internal evaluation so that a greater degree of responsibility could be given to the teacher to evaluate the performance of his own wards, providing adequate inbuilt system of checks and balances and making it fool-proof. Somehow neither the students not the teachers liked this idea Why our teachers don't want to have this responsibility or our students rely on their teachers is so disturbing to think about. This is no argument that an experiment should not be tried simply because it is likely to be a flop or no powers to be given because they are likely to be misused. Cases of misuse can be judged on merit. I am sure properly trained teachers with a high scale of moral values can evolve a newer society if they believe in the famous saying, "physician heal thyself first".

Depoliticization

I come now to the most difficult part of the infrastructural improvement—the depoliticization of educational institutions (bodies, unions, etc.). In all our educational institutions there must be provided an adequate machinery to look into the grievances of teachers and students so that they could be looked into at the very initial level. No body will think of trade unions if he or she is assured of a happy future. It is a demon, the wolf on the door that keeps haunting him. Our students know that from here they are going into nowhere. So they think in terms of politics. Whereas the menace is not very alarming in our primary or secondary schools, it is assuming serious proportions in our colleges and universities, both at the teachers' and the students' levels.

I must feel bold in saying that politics in the Universities begins first with the appointment of Vice-Chancellors, when these appointments are made on consideration other than academic. In the appointment of the Vice-Chancellors the government must be guided by the man's academic excellence, administrative ability, his day to day style of functioning, degree of acceptability among teachers and students, his imaginative vitality and innovative mind. I would suggest that every Vice-Chancellor should be given five years term and no further extension unless it is in very exceptional cases Also a word to political parties: they should treat educational institutions as a prohibited area for them and desist from encouraging students' wings as affiliates of their political parties.

New Pattern

As to the issues of infrastructure being extended to the structuring of education at and beyond 10+2 level, it needs to be pointed out that the new pattern of education i.e. 10+2+3 is the outcome of the deliberations of the Education Commission (1964-66). The report of the said Commission was published under the rubric,

UNIVERSITY NEWS

A Weekly Chronicle of Higher Education

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"Education and the National Development". Perhaps it will not be out of place to recall that this kind of restructuring was first recommended by the Calcutta University Commission (1919). Therefore, there seems to be nothing new in this idea. What is amazing is why this should not have been tried all these years. The National Education Commission Resolution (1968) laid stress on

(a) Economic upliftment ;
(b) Cultural development ;
(c) Promotion of National Integration, and
(d) Setting up of Socialist Democratic order

It is high time that we tried these innovations if we want to impart a peculiarly Indian flavour to our education system. This scheme envisages 10 years of schooling in General Education for all and sundry, another two years again in the school for determining whether the learner has to go beyond 10+2 stage, towards the academic or towards vocational education. It will be appropriate if, as I suggested earlier in this paper, at the terminal of 10+2, the learner is guided on to where his inherent potentialities direct him. Apart from minimising the heavy rush of admissions to the colleges and universities, it will bring about a greater degree of ciency and competence in the area which a student chooses as his own field. If still some students feel that they can earn and learn simultaneously, then we should strengthen our distance education centres or Schools for Correspondence Education. In any case it is time we remove the cobwebs from around our educational policies and try innovative techniques. I find a great substance in what the Education Commission (1964-66) recommended more than two decades ago. "It is never too late to seek a newer world." ☐

CD-ROM
Application to University Libraries

(Continued from page 2)

that professionals require and are willing to learn System support, documentation, training—all these differ significantly depending on whether the system is 'behind the counter' or 'out-front'

Given the fluid environment in India of CD-ROM for 1987, what seems to make the most sense will be small well thought-out pilot projects The basic objectives of such projects should be to understand the technology and to identify and analyse the problems of making it work in the library.

One straightforward project might be to acquire one system and one product and use it experimentally for a while. For example, library corporation's biblio file can be delivered for less than Rs 40,000 That price includes a CD-ROM drive with an interface to an IBM PC, operating software, a year's worth of quarterly updates. Libraries in India ready to take the plunge, should take it.

For example, a library cooperative might elect to publish a union catalogue of special collections on CD-ROM. One or more integrated systems could be purchased from a vendor. Several service-bureau-like sources of assistance are available to assist with creating and producing the CD-ROM disk product themselves They are feasible and affordable now.

Ours are the times that try human vision. It is difficult to tell where we are, much less where we are headed. Saying that we are passing from an industrial to an information economy overstates the case. Our industrial base remains as important as ever. It is just that we are learning to work smarter; the information value-added component of production is increasing.

Another example of CD-ROM is that information, document and databases which only yesterday required mainframe storage and handling are now decanted on to a plastic disc weighing less than an ounce and measuring less than five inches across.

The new role for the library and librarian is an enhanced one that will be highly visible to scientists and engineers. The small bulk, low cost, enormous storage capacity of CD-ROM has forever altered that situation. CD-ROM, a version of the laser or optical disks libraries have already seen in biblio file is formated for digital data recording. With all the software expertise in India, what are we waiting for? ☐

An Open Letter to Fellow Academics and Friends of Academia

YASH PAL
Chairman, University Grants Commission

During the last couple of months I have recalled innumerable occasions when a teacher from a foreign university has cut off from a seminar, a conference or an inter-governmental meeting to take an inconvenient flight home to arrive a couple of hours before he/she had to teach a class. No other concern, no matter of State policy, or personal advancement, was more important than taking the class, when it was supposed to be taken. Everyone has a right to disagree, to protest, to campaign, to organise, to argue Particularly teachers and students...because this is a class of people which should determine the culture of society, help correct its mistakes, and analyse and point out when others are caught up in dead habit, empty rhetoric, or are ignorant about our privileged perceptions. But why, in heaven's name, should our protest take a form of not teaching. As it is we teach far less than any major university in the world, what with holidays, anniversaries—and various other forms of disturbances on the campus. If higher education has an impact on our relative balance with respect to rest of the world, we ought to be working harder than anyone else. I get very upset when I hear sometimes that in many subjects, teaching is really not much use, students can read themselves. Sometimes it appears that some teachers also hold the same view.

Agreement with AIFUCTO

On the 4th of September, we came to an agreement with All India Federation of University and College Teachers Organisation (AIFUCTO). AIFUCTO had called the strike and AIFUCTO, withdrew the strike on the basis of this agreement In my view this agreement could have been arrived at even earlier, even before the strike, but it seems some events are pre-destined. It may appear that the discussions with AIFUCTO started just three or four days before the agreement. This is not true. I don't remember exactly, but there were something like fifteen direct or indirect contacts, messages and meetings during that one month. The UGC, the Government and AIFUCTO all dispensed with some formal procedures to come to this agreement ...and all this was done in good faith and has not been repudiated by formal mechanisms of the parties involved. One of the important parts of the agreement was that there would be a continuing consultation with the all India teachers' organisation while we address anomalies, if any. The result of this agreement is that the strike has been withdrawn in all the 150 odd universities (a few of which had not gone on strike, or withdrawn it even earlier) except for Delhi University. As an academic I will never place myself in a position where I refuse to talk to any other academic. Indeed I have been doing that, continuously, all over the country. However, how does one formally negotiate with one association on a matter which has been settled in discussion with the All India Organisation—with whom discussions are still open, according to the agreement. One of the important demands of the strike was that the scheme should be uniformally implemented in all the States. The UGC and the Central Government have promised to do their best to ensure that this will be so. How do we, then sit down to discuss something at variance with what has been agreed to for everyone else.

It has been alleged that there may be other interests at work—other than the interests of academics, students and teachers. If this is so, it is a pity. Whichever way our society evolves, in terms of its social and political structure, we will always need the highest quality of thinkers, professionals, scientists and technicians. In the present world a year lost will never be made up.

Implications of the Scheme as it stands now

Please step back a little from your personal feelings of not being treated as well as someone who is a few years older or a few years younger and look at what has emerged.

Every teacher, who has a right to be called a teacher, should be able to progress from lecturer through senior lecturer, in about 16 years, to a scale of 3700-5700.

If judged by a university appointed selection committee as a person who has begun to make some sort of a mark in the world of teaching, learning and research, he/she would be promoted to the above scale and called a Reader.

If the selection committee decides that his/her performance is adequate, but he/she should not yet be called a Reader, (for example in regard to ability to guide research students) he/she can still be promoted and given the Reader's scale.

The selection committee has of course the right to determine that the person concerned is not yet fit for promotion and he/she can continue to draw his/her increments in the senior grade right upto the salary of Rs. 5000

The scheme envisages as of now that a lecturer should be eligible for promotion to senior scale after 8 years (5 if he/she enters with Ph.D. and 7 if after an M. Phil.). In my view, if it happens that the person concerned does not meet the required criteria at that time or for a couple of years later, he/she could still be eligible for consideration by the selection committee for the 3700-5700 grade after 16 years (13 if he/she entered with Ph. D. and 15 if after an M. Phil) in lecturer/senior lecturer grade. The incentive for becoming a senior lecturer earlier would be a jump in salary of a couple of hundred rupees, and increased increments

Thus we have a scheme in which practically all valid teachers, in colleges or universities, can hope to reach a top salary of Rs. 5700 by the time they are around 50—and yet have about 10 years of service left. And all through their career, after first 10 years or so, they can apply for open posts of Professor and be placed in the grade Rs. 4500-7300.

In addition to the career advancement possibilities mentioned earlier, there will, of course, remain the faster track open to those who compete for open positions of Readers and Professors created in various universities and colleges. There are two aspects of these important channels. Some young and brilliant teachers perform best if they are recognised early. In addition this is one mechanism available to us to discourage inbreeding and to ensure that talent from different institutions and different parts of the country is mixed and dispersed. Creativity often needs exposure to different schools of thought and learning. I would personally prefer a convention that students of a college or a university should not get their first job in the same college or university. One can't do it legally, but such conventions do exist in some of the best places in the world.

More Posts of Readers and Professors

It has been stated that larger number of posts of Readers and Professors would be created in universities and colleges to broaden this channel of open selection We have already started discussing this with universities and colleges, and also with teachers' organisations, in order to evolve some criteria for this. One thought which is being discussed is that in departments which have 8 or so staff members, one may create one post of Reader immediately, which can later be adjusted against a temporary vacancy or a retirement. Some mechanisms of this kind would be worked out in discussion with teachers. I am particularly anxious about this, because this would also enhance the opportunities for some of the younger teachers.

Further, I believe that each university should work aggressively to seek out about half a dozen brilliant people every year, independent of seniority, from within the university or without, and ask for special posts to be created for them at an appropriate level.

All this is possible.........and becomes increasingly feasible, if the concern for quality is not sacrificed.

Relative Numbers in different Grades & Flexible Complementing

I have said that our higher education has to have its own character. But some indicators from the outside world are useful to keep in mind—even if we consciously decide to do something different. Time was, when like the German and British universities, our university departments also had a single Professor......and sometimes not even that. Things have changed abroad, and they have also changed here But even now the average number of Professors in British universities is about 10% of the total teaching staff, while this ratio in some of our universities has increased much beyond that. Indeed in our central university departments, the number of Professors and Readers are about equal and number of Lecturers is less than either of them.

I am not against flexible complementing per se. Indeed in some of our science agencies flexible complementing has been practiced for last 40 years. However, these agencies have 6 or 7 linear scales. Mistakes made once can be corrected. The result is that in institutions with several thousand scientists and engineers the number of people in the top H grade is only of the order of a dozen'. Comparisons are always fallacious when one is dealing with systems with different rates of growth, but the fact must, nevertheless, be taken note of.

Assessment and Evaluation

Present state of rhetoric is such that whenever the word selection or assessment is mentioned, one leaves oneself open to the charge of "bureaucratization". Clearly some mechanism exterior to oneself has to be invoked for assessment. One should participate and aid in this process, but one can't abolish it and convert it into a mere passage of time. What has been proposed is that assessment should be data-based, open and participatory. Learning to be assessed by peers and other academics is part of the culture of academia. Indeed without this, academic work has no valid existence. We have to jealously guard the honesty of the process of assessment. The fact that there have been unfair practices cannot be an argument that assessment can be eliminated I have requested teacher's organisations to help evolve a mechanism which would be most suitable, but clearly universities themselves are finally responsible for this.

Suspicion about Innovations

At a meeting a few months ago in a major technological university, one of the participants remarked "The arena of educational reform is like a snake farm ; you have to move, but please move slowly". Referring to the difficulties of introducing curriculum reforms, another frustrated academic stated "Introducing curriculum changes is like moving a graveyard ; the dead have many friends". Both of these are rather clever remarks, but the suspicion of things different or new is very real, and valid. On strong recommendation of several academics, a programme of orientation of college and university teachers is being introduced. To those who look at anything new as diabolical, it may be useful to quote from a few remarks I made at one of the five workshops organised by universities to clarify the programme of orientation courses :

"Orientation is not concerned so much with the content of the separate disciplines of the teachers who would come together It has more to do with developing an appreciation through mutual interaction that in all disciplines there are many vistas, many doors to be opened. There is meaning and excitement in relationships. There are possibilities of overlaps and emergence of new disciplines. There is poetry in scientific theories and deep logic to language That we are living in a world where the time interval between events is decreasing exponentially and yet, for academics, there can be, and are, deep precious moments when time stands still and one is lost in pure thought or becomes a component of a rich experience. That while much of knowledge in any discipline is universal, it becomes our own when we immerse it in our own fermenting broth and particularise it with our examples, our own metaphor. That we can and should try to relate to each others' work and insights through their disciplines—and simultaneously with the concerns of the country and world at large.

"In addition :

"That we have the special role and joy of helping to create great scientists, artists, poets, philosophers, thinkers—and doers. That we are important, we are special, but also agents for creating new understandings, new insights, new relatedness, new wealth, new joys—and a calm self-confidence. Alongside this we have to develop a true humility—which comes through realizing how little of the knowable we do know.

"And how should we do all this ?

"By sparking interaction amongst the participants—their talking to and telling each other about the meaning and excitement of their field.

"By bringing in others, who radiate the joy of being involved in academic pursuits.

"By putting before them a canvas to which they may add their special colours and hues.

"By sharing with them different glimpses of the emerging Indian identity

"And while we try to do all this and more ;

"Getting them familiar with examples of the mechanics of doing their job : about teaching, testing, grades and scores, and the dangers of over-teach and learning to say, I don't know, I will find out and let you know, but you also try to find out, yourself, or through study and discourse".

A Word on UGC

My close connection with the University Grants Commission is just a year and a half old. I am quite aware of our weaknesses—but I am also aware of our special strengths—and our special character, and the character of the sanction for what we do. The Commission is not like another office where a number of people with authority, responsibility and some wisdom might take decisions for others. The Commission is basically a cooperative of academics which has to fulfil some resposibilities. Practicably all our work is done through panels and committees of a large number of academics drawn from all over the country. I would estimate that about 7000 academics are involved every year, in the process of consultation, assessment, and aspects of policy formulation. Our real wisdom lies in the wisdom of the people we work for. One educational writer has referred to the Commission as an "academic

(*Continued on page 13*)

North Zone Adult Education Conference

The Indian Adult Education Association (IAEA) in collaboration with the Centre of Adult, Continuing Education and Extension Work, University of Jammu, organised the North Zone Conference of Adult Education in Jammu on Sep 8-9, 1987 Inaugurating the conference Prof Satya Bhushan, Director, National Institute of Educational Planning and Administration said that illiteracy was invariably associated with mass deprivation and socio-economic underdevelopment and all-out efforts should be made to wipe out illiteracy from the country. He said that the constraint of literacy in overall development of a country could be overcome by national commitment at all levels, mass involvement and decentralisation of the process He was of the view that area-specific and population-specific planning should be the approach now instead of the centre-based approach This, he said, would include establishing close linkages with developmental programmes, such as those relating to health, nutrition, environmental sanitation, rural development, family welfare, etc.

The success of new approach will greatly depend on the extent the operational part (planning management and monitoring) is decentralised, de-bureaucratised and made participatory and ultimately converted into people's programme. Environment building through media, mass meetings, involvement of social activists, voluntary groups of youth and women can serve as powerful educational inputs. He felt that in order to reduce inequalities and equalize educational opportunities, priority should be accorded to those blocks and areas which are educationally and economically most backward.

Dr. M.L. Lakhanpal, Vice-Chancellor, University of Jammu, who presided over the inaugural function said that adult education was a life-long education and it would still be needed even if 100 per cent literacy was achieved. He said that adult education should result in changing the quality of life

Over 50 delegates, representing Government Departments, voluntary organisations, State Resource Centres and Universities from the States of Himachal Pradesh, Punjab, Rajasthan, Jammu & Kashmir, Chandigarh and Delhi participated The important topics discussed at the conference included: mass programme for literacy; women adult education programme and the feasibility of setting up technological demonstration centres under the National Literacy Mission

Delivering the valedictory address, Dr S.C Dutta, President of the Association, said that adult education was not merely an educational programme, but it was synonymous with development. He said that area-approach should be adopted to improve the socio-economic conditions of the people in the area.

Some of the important recommendations made at the conference are as follows.

(1) Vigorous and earnest efforts should be made to achieve the target of elimination of illiteracy in the age group of 15-35 by 1995 as laid down in the New Education Policy.

(2) Modern and traditional medias like film, T.V., Radio, Newspapers, Kathputli, Notanki, Yatras, etc. should be used in motivating the learners.

(3) Provision should be made for rent or a lumpsum grant to put up a shed to tide over difficulties in getting suitable accommodation for the Adult Education Centres. The shed grant should be to the extent of 50 per cent and the rest should be raised from the community.

(4) As envisaged in the New Education Policy and the National Literacy Mission, a Jana Shikshan Nilayam be established in each village in order to ensure greater participation of people, particularly women. The major responsibility for running these Nilayams should be given to voluntary agencies/institutions engaged in adult education and a grant for a minimum period of five years, to start with, given to voluntary agencies for the purpose.

(5) States where there are not many voluntary agencies should foster and encourage voluntary agencies so that they seek people's involvement and cooperation and organise programme for the upliftment of the weaker sections

(6) Wide publicity should be given to the mass programme of literacy and those interested in the programme should be given the literacy kit free of cost. This will ensure participation of large number of people in this programme.

(7) Noting with concern that grants to voluntary agencies were not released in time thereby affecting the tempo of adult education programmes, the conference recommended that timely funds should be provided to these organisations to help them achieve the target of wiping out illiteracy speedily.

(8) The conference also recommended that adequate funds should be placed at the disposal of the universities so that sufficient quantity of teaching learning material

is supplied to the adult education centres.

(9) Cost effectiveness of technological inputs should be taken into consideration before introducing them in the adult education programme under the National Literacy Mission.

(10) Area approach for integrated total development should be adopted to achieve growth with social justice.

Management Techniques for Information Handling

A course on management techniques for information handling in technical cells in ICAR institutes was recently inaugurated at the National Academy of Agricultural Research Management (NAARM), Rajendranagar, Hyderabad. Inaugurating the course, Dr. K.V. Raman, Director, NAARM, said that self-reliance and self-sufficiency in food production would be the main thrust in the immediate future. To meet the new challenges and exploit the untapped resources, ICAR at present has about 18,000 research projects located in more than 1,400 centres engaging about 7,000 highly qualified scientists. In this endeavour the technical personnel in the Technical cell play an important role in coordinating with the scientists for formulating research programmes, controlling, monitoring implementing, reporting the projects. There is an urgent need to imbibe some management techniques for the personnel engaged in the information cells to meet the demand for providing qualitative information packages and for uniformities in project file maintenance, monitoring and evaluation.

Mr. R.B. Gaddagimath, Course Coordinator, explained the course design and stressed the importance of effective storage and retrieving of information.

U.S. Assistance for IIT Projects

The National Science Foundation in the United States has approved three projects costing over Rs. 1.5 crores to be executed in the Indian Institute of Technology, Madras, in the next three years. The amount will be used to meet the expenditure on research, equipment and exchange of scientists between the institute and the collaborating American universities. The research will mainly be on identified topics of relevance to India and the U.S

Two of the three projects belong to the Mechanical and one to the Aeronautical Engineering Departments. The project, entitled "Pressurised fluidised bed combustion of low grade coal," will be executed by Prof. V.M. Krishna Sastri and Dr. Ajit Kumar Kolar from the IIT, and Prof. V. Zakkay of New York University (U.S.). The primary objective is to study the efficiency of burning of various types of low grade (light ash, high sulphur content) coals and lignite in a fluidised bed combustor of sand or ash at pressures up to 10 atmospheres.

The second project will enable the efficient use of ethyl and methyl alcohols, hydrogen and biogas as alternative fuels in diesel engines. Another objective is to use alcohol in small, two-stroke engines. The principal investigator is Prof. K.V. Gopalakrishnan from the IIT while his U.S. collaborator is Prof. Richard Pefley of the University of Santa Clara in California.

"Heat transfer in arc welding" is the third project which gives scope for high technology research in the entire area of plasma manufacturing and processing. Prof. T. K. Bose of the Aeronautical Engineering Department of the IIT and Prof. C. J. Cremers of the University of Kentucky are the collaborating scientists.

National Information Centre for Leather and Allied Industries

Dr. G. Thyagarajan, Director, Central Leather Research Institute (CLRI), inaugurated the newly installed micro computer at the National Information Centre for Leather and Allied Industries (NICLAI), CLRI on 10th September 1987. NICLAI is a project under the NISSAT, CSIR, Govt of India. This microcomputer—a WIPRO PC/XT with 640 K RAM and 20 Mb hard disk drive with a floppy drive and two printers is going to be used mainly for information storage and retrieval applications Already CDS/ISIS micro version, a Unesco supplied software for information retrieval has been implemented and tested. Several other data base application software packages are being implemented An abstracting service, SDI service, directory enquiry service and a thesaurus production project are being planned for implementation.

INSA Bursary Grant Scheme

The Indian National Science Academy (INSA) has announced a Bursary grant (non-recurring) to provide one time supplementary support to individual scientists for carrying out research effectively. According to INSA sources, the grant must be utilized for the purchase of equipment (if not available in the laboratory), components and accessories, chemicals and other such items concerned for research and/or to organize a small group discussion of professional colleagues on important aspects of research and development, or any other significant activity related to research. Under no circumstances shall the Bursary grant be used for attending conferences abroad or in India. The Bursary grant will not be periodic or recurring as this is a relatively small amount ranging between Rs. 10,000 to Rs. 20,000 and in exceptional cases upto Rs. 40,000.

Further details and application form for the Bursary grant may be obtained from the office of the Executive Secretary, Indian National Science Academy, Bahadur Shah Zafar Marg, New Delhi-110002.

Ghurye Award for Prof. Oommen

Prof. T.K. Oommen, an eminent Sociologist and Professor of Sociology at the Jawaharlal Nehru University has won the prestigious 'G.S. Ghurye Award', named after one of the founding fathers of Indian Sociology. His book **'From Mobilization to Institutionalization : the dynamics of Agrarian Movement in 20th Century Kerala'** has been adjudged the best published work of the calendar year 1985 in Sociology and Anthropology. The Award shall be presented to Prof. Oommen shortly.

Prof. Oommen is also the recipient of Prof. V.K.R V. Rao Award in Sociology for 1981.

Prof. Oommen has been an active contributor to the areas of Social Movements, political sociology, rural social transformation, professions and professionalization for the last two decades. Author of numerous research papers in national and international professional journals, Prof. Oommen has six books to his credit. He was the Secretary-General of the XI World Congress of Sociology held in New Delhi last year.

M.Sc. Course for Teachers

The SNDT Women's University is reported to have introduced a new post-graduate course in science leading to M. Sc. (Chemistry) degree, exclusively for science teachers.

The curriculum of this two-year course includes all four branches of chemistry, namely, organic, inorganic, physical and analytical with fundamental concepts treated at postgraduate level.

UGC Assistance for Osmania Varsity

University Grants Commission (UGC) has sanctioned Rs. 1.14 crores to Osmania University College of Engineering and Technology under Seventh Plan proposals. This grant will be utilised for strengthening the existing teaching and research facilities in the engineering and technology faculties.

We Congratulate . . .

(1) **Shri Ramjilal Sahayak who has been appointed as Vice-Chancellor of the Bundelkhand University, Jhansi.**

News from Agril. Varsities

Farm Research & National Progress

Mr Yogendra Makwana, Union Minister of State for Agriculture inaugurated the national symposium on "the role of scientific research and its management in accelerating socio-economic transmission" organised by the Agricultural Research Service Scientists' (ARS) Forum at IARI, New Delhi. Mr. Yogendra Makwana reminded the scientists that although the agricultural research had contributed its share in the national progress, it has to play a more important role in future. He complimented the ARS Scientists Forum for being alive to this responsibility and organising the national symposium.

The Minister urged the scientists to shape technology that would not disturb the socio-cultural fabric of the client system. Advances in agricultural research, the Minister observed, not only made the country self-reliant in food but also succeeded in generating rural employment and reasonable equity in income distribution

Referring to the future role of ARS Forum of Scientists, the Minister wanted them to take a mission oriented approach in planning and conducting research.

Dr. Y.P. Singh, President of the ARS Scientists Forum highlighted how Indian Agricultural Research gave higher returns in the past than the agricultural research even in America. He asserted that no other sector in Indian science could claim such credit.

World Food Award for Swaminathan

Dr. M. S. Swaminathan, Head of the International Rice Research Institute, Manila and one of India's leading agricultural scientists, has been selected for the first 'General foods world food' prize for his outstanding contributions toward improvement of quality and productivity of Asia's staple food, rice. The prize comprises a cash award of 200,000 dollar and a commemorative sculpture.

The "General foods world food" annual prize is being instituted this year with the objective of honouring men and women, whose work bear importance for the world food supply.

News from Abroad

Research Grants for Chemistry

The Royal Society of Chemistry, London, operates a Research Fund to provide financial assistance of upto £ 300 to members for the purchase of Chemicals, equipment or for running expenses of chemical education research. Primarily intended for those working in Universities/polytechnics/colleges outside the UK, preference will be given to those working in less well-endowed institutions A limited number of grants, each of approximately £ 300, are available for 1988 and the applications from Society's members will be considered on merit.

For members in the developing countries, additional funds have been made available for 1988 by the Society's International Committee and preference will be given to those who would be able to cite collaborative research projects with UK institutions

Application forms and other details may be obtained from Mr. S. S Langer, The Royal Society of Chemistry, Burlington House, London WIV OBN (UK). The last date for applications is 1st November 1987

Sports News

Air Force Jobs for Sportsmen

The Government has announced certain relaxations for Air Force Jobs for Sportsmen.

Merited sportsmen will be allowed relaxation in age and qualification for recruitment to the Indian Air Force Under a special scheme evolved, Matriculation qualification could be relaxed to eighth standard pass.

Distinguished sportsmen in age group 16-22 will be ranked Sergeant after successful six-month training. Trainees would be given Rs. 850 per month. Those excellent in sports and games will be promoted out of turn. For further details, contact the Secretary, Air Force Sports Control Board, New Delhi (Race Course)—100 003.

An Open Letter to Fellow Academics and Friends of Academia

(Continued from page 9)

cripple", because we usually stop at issuing guidelines and do not give detailed instructions like an autocratic bureaucracy, or because we do not take rigid stands opposing prerogatives of State legislatures or insist on our particular brand of wisdom because we recognise that other brands are equally valid But we also need to change Perhaps we are changing, because we are also being accused of "activism", which to me indicates that we may be beginning to move in the right direction. Our "activism" is also derived from the activism and impatience of a large number of academics—teachers, researchers, students.

General

My passion is to help infuse a renewed vigour in our higher education system. We cannot be a copy of anyone else's system. A part of the agenda is similar to that of all important universities of the world—but much else is our own. In a country so full of linguistic and cultural richness, such social and economic disparities, with needs of self-reliance in agriculture, science and technology, with challenges which are at once, local, national and global, our special underlying preoccupation with personal and philosophical values, our own past, present, and hopefully our own future, the quality and character of our higher education will have to be our own Many other things may be more important for the present, but what we do in higher education will determine what kind of a people we become. No one should write detailed recipes and give prescriptions—because no one is wise enough—and time is so dense these days. But what is required is a new exuberance—discrimination and quality—ensured through assessment and monitoring by jealous academics who will not compromise—and not let others compromise—on the criteria of excellence.

There is a great deal we need, in order to do our work properly and with the intensity we are capable of—but we have also to manage what we have, quite a bit better, than we do. We need far better libraries and laboratories—and places for teachers to sit, work and study We should work for that and try to get them. We have to work together to see that political and other non-academic interference in running the education system is eliminated. But academics also collude Management of colleges and universities should be primarily in the hands of academics – and should be for academic purposes; this also we need to work for In social scientific, cultural and technical terms, we have to move centre stage. There is so much to be done—and so much personal fulfilment to be sought while doing it—that we cannot just wait around, even if we have to protest. Let us move forward in a true partnership of all concerned.

29.9.1987.

National Conference on Role of Universities in Implementation of New Education Policy

The Association of Indian Universities will organise, in collaboration with Osmania University, a National Conference on Role of Universities in Implementation of New Education Policy on December 18 & 19, 1987 at Hyderabad.

The **New Education Policy** (NEP) visualises the role of higher education as providing people with an opportunity to reflect on the critical, social, economic, cultural, moral and spiritual issues facing humanity. It contributes to national development through dissemination of specialised knowledge and skills.

The role of universities is crucial in the matter since one of the important functions of universities and institutes of higher learning is to provide specialized scientific and technical skills, imparting of knowledge, contributing to every sector of national development and improving social conduct and behaviour. Thus, a major share of responsibilities, as envisaged in the NEP, rests with the universities and other educational institutions. It becomes imperative for the educational community to try to define some of the important issues involved in the management of higher education, the efficiency improvement, the financing of higher education, youth services and physical fitness programmes, education in human values, etc. in the light of the NEP recommendations.

The deliberations of the conference will focus on the following topics :

I. **Management of Higher Education**
- Consolidation and Expansion of Institutions
- Autonomous Colleges and Departments
- National Apex Body and State Councils of Higher Education

II. **Improvement in Efficiency**
- Teachers Training
- Restructuring of Courses
- Research and Extension
- Evaluation and Examinations

III. **New Strategies in Higher Education**
- Evaluation and Accreditation of Institutions
- Youth Services, Sports and Physical Fitness Programmes
- Distance Teaching/Learning
- National Testing Service
- Rural Universities
- Education in Human Values

PROGRAMME

December 18, 1987 (*Friday*)

10.00 A.M.	INAUGURATION
11.30 to 1.00	SESSION I
2.00 to 4.30	SESSION II

December 19, 1987 (*Saturday*)

9.00 to 11.30 A.M.	SESSION III
12.00 to 1.30	SESSION IV
2.30 to 4.30	SESSION V (Plenary)

Participation

The participation to the conference can be either in the form of presentation of a paper or through discussion. The participation to the conference is open to individuals belonging to universities, research institutions, Govt. and non-Govt. organisations involved in planning and development of higher education.

Registration Fee

Each delegate is required to pay a non-refundable registration fee of Rs. 400 through a bank draft in favour of the Secretary, Association of Indian Universities, New Delhi. The fee includes accommodation conference papers and meals during the conference dates, December 18 & 19, 1987.

Last date for receipt of registration fee alongwith registration form (to be filled in *duplicate*) is **October 15, 1987.**

Venue

The venue of the conference is Osmania University, Hyderabad, A.P.

Language

The official language of the conference will be English.

Receipt of Papers

The papers (Typewritten and in duplicate) should reach the Convenor not later than **October 15, 1987.**

Convenor

Dr. V. Natarajan
Project Director (Exams.)
Association of Indian Universities
AIU House, 16 Kotla Marg
New Delhi 110 002.
Telephone : 3310059
Telex : 31-5578 AIU IN
Telegram : 'ASINDU'

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

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Jacob, Plamthodathil S. Values in Management Education. *New Frontiers Edn* 17(2), 1987, 34-44.

ADULT EDUCATION

Guglielmino, Paul J and others. Self-directed learning readiness and performance in the workplace. *Hr Edn* 16(3), 1987, 303-17.

DISTANCE EDUCATION

Kakkar, S.B. Making correspondence education effectiye. *J Indian Edn* 13(1), 1987, 16-21.

COMPARATIVE EDUCATION & COUNTRY STUDIES

Francis, K. Development of education in Travancore, 1817-1947. *New Frontiers Edn* 17(2), 1987, 53-67.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Marine Biology

1. Philip, Rosamma. *Studies on proteolytic bacteria in fish spoilage*. CUST. Dr. P. Lakshmanaperumalsamy.

Biochemistry

1. Agarwal, Sanjiv. *Lipid peroxidation and membrane damage as caused by radiations and chemicals.* Calcutta.
2. Das, Tapan Kumar. *Biochemical and genetical studies on the mutants of Aspergillus species.* Calcutta.
3. Mittal, Richa. *Studies on some plant membrane glycoprotein enzymes : Purification and properties of 5-nucleotidase and acid phosphatase from the membranes of Arachis hypogaea cotyledons.* Roorkee.
4. Raja, Promatha Sankar. *Study of the effect of carcinogen on some of the enzymes in growing chick embryo.* Gauhati. Dr. P. Goswami.
5. Sridhar, N. *Studies on immobilization of beta-galactosidase of Streptococus cremoris (H).* Kurukshetra.
6. Subramanian, M. *Gene expression in eukaryotic cells : Studies on protein synthesis in resting and proliferating mouse embryo cells in culture.* Madurai.

Environmental Sciences

1. Solomon Raju, Aluri Jacob. *The pollination ecology of some Lamiaceae.* Andhra.

Microbiology

1. Kamalaveni, R. *Environmental biotechnology in cyanobacteria : Studies on isolates of Tolypothrix.* Madurai.

2. Krishna Devi. *Carbon metabolism in relation to nitrogen fixation in Azospirillum sp.* HAU.

3. Sharma, Suniti Bala. *Experimental studies on non-specific and immune factors during influenza virus infection.* HP.

Botany

1. Agarwal, Madhu. *Morphological, cytological and cytochemical investigations of some cryptogams and an investigation of some phytoplankton periodicity.* Calcutta.

2. Chaudhuri, Amiya Nimai. *Morphological, anatomical and palynological studies on some members of Boraginaceae.* Burdwan Prof. S.K. Roy.

3. Ghosh, Santa *Analysis of leaf-shedding behaviour in different varieties of jute and other fibre yielding plants.* Burdwan Prof. Salil Kr. Chatterjee.

4. Kargupta, Amarendranath. *Taxonomic investigation on fresh-water filamentous green algae of Birbhum and Murshidabad Districts of West Bengal.* Burdwan. Prof. Pranjit Sarma.

5 Malik, Surendra Kumar. *Studies of athyrium complex in Rajasthan.* Rajasthan Dr T.N. Bhardwaj.

6. Mathur, Om Narain. *Studies on induced mutagenesis in cultivated varieties of sesame.* Rajasthan. Dr. D. Singh.

7. Molly, M J. *Organisation and morphogenesis of the vascular system in Polypodiaceae : An inquiry into the nature of shoot system in vascular plants.* Calicut. Dr. B.K. Nayar.

8. Mukhopadhyay, Anutandra. *Cultural and cytological studies on some green algae of West Bengal.* Calcutta.

9. Pawar, Arun Baburao *Investigation of follicolous fungi from Maharashtra.* Shivaji Dr. M.S. Patil.

10. Saini, Babu Lal. *Ecological and physiological studies on the decomposing rice straw in relation to mesophilic micro-organisms.* Kurukshetra.

11. Sharma, Sanjeev Kumar. *Studies on Sclerotium oryzae Catt. on paddy with special reference to its control by cultural and chemical methods.* Kurukshetra.

12. Shivandra Kumar. *Physiology of blast resistance in rice.* Utkal.

13. Sinha, Subodh Chandra. *Ethnobotanical study of Manipur.* Manipur. Dr. D.B. Deb.

14. Syed Aliar Zindha Nainar. *Experimental studies on vanilla.* Calicut. Dr. B.K. Nayar.

15. Tamang, Man Bahadur. *Studies on the nature of shoot production in clonal tea, Camellia sinensis (L) O. Kuntze as influenced by some important cultural practices.* Gauhati. Dr. H.P. Bezbarua and Dr. C.L. Boishya.

16. Yadava, Bal Krishan. *Analysis of variability in garden pea.* Kurukshetra.

Agriculture

1. Amanul Haque. *Studies on the effects of plant growth regulators on the growth and yield of potato.* Gauhati. Dr. C.M. Sarma.

2. Bansal, Ashok Kumar. *Genetic analysis of yield, oil content and their components in Indian mustard. Brassica juncea (L) Czern & Coss under sodic soil conditions.* Kurukshetra.

3. Bhayalal, Singandhupe Ramlal. *Efficiency of nitrogen use under varying soil moisture regimes in rice in sodic soil.* Kurukshetra.

4. Buzarbarua, Aparna. *Studies on the relative growth, development and productivity of certain economic plants.* Gauhati. Dr. P.P. Wamanon.

5. Chamuah, Hara Kanta. *Effect of different phosphatic fertilizers on high altitude rice, Oryza sativa Linn under rainfed conditions.* Gauhati. Dr. P.P. Wamanon.

6. Datt, Shambu. *Studies on nutrition in relation to other orchard management practices in Kinnow, Citrus nobilis X Citrus deliciosa.* YS Parmar. Dr. R.P. Awasthi.

7. Gill, Harnam Singh. *Studies on the evaluation of selected tree species for their tolerance to sodicity and mechanical impedance in a highly sodic soil with particular reference to root growth behaviour.* Kurukshetra.

8. Kadian, Virender Singh. *Relative performance of pigeonpea genotypes with varying plant population/spacings under late sown conditions.* HAU.

9. Saini, Jiwan Prakash. *Studies on the effects of herbicidal doses and irrigation on different varieties of sugarcane, Saccharum officinarum L in Himachal Pradesh.* HP Krishi. Dr. I.S. Chakor.

10. Satpute, Tukaram Gangadharsa. *Study of water allocation in the command area of Jayakwadi irrigation project, Maharashtra.* Marathwada Agrl. Dr. K.D. Rajmane.

11. Shankar Lal. *Analysis of allelism and combined effects of some genes in barley, Hordeum vulgare L. em Bowden.* HP Krishi. Dr. G.S. Sethi.

12. Singh, Rama Shankar. *Studies on factors limiting production in rainfed upland rice.* Birsa Agrl.

Zoology

1. Bandyopadhyay, Samarendranath. *Chromosomal endophenotype of some Indian Anura with reference to C-band distribution and sensitivity of hetero chromatin to induced aberration.* Burdwan. Dr. Samar Chakraborty.

2. Chattopadhyay, Ratna. *Isolation and partial purification of enzyme acetylenalinesterase (E C. 3.11.1.7) from chick (Galcus Sp) brain and practical applicatiou in the effect of some anticholinesterase agents on partially purified enzyme.* Burdwan. Prof. D.K. Choudhuri and Prof. C.R. Maity.

3. Chauhan, Ramesh Chand. *Hydrobiological studies of Renuka and Rewalsar lakes of Himachal Pradesh with special emphasis on productivity.* HP.

4. Gojer, Mohan Ebenezer. *Studies on the adipose tissue of mice in experimental uranyl nitrate intoxication.* Shivaji. Dr. V.A. Sawant.

5. Gupta, Ashok Kumar. *Studies on dung-beetles (Coleoptera: Scarabaeidae; Laparosticti) of North West India.* Kurukshetra.

6. Haresh Kumar, B. *Certain non-edible seed oils and fatty derivatives as antifeedants and growth regulators for certain insect pests.* Osmania.

7. Hosetti, Basaling Basappa. *Studies on the use of some important groups of microbes in the treatment of waste waters.* Karnatak. Dr. H.S. Patil.

8. Jain, Prabha *Hypolipidaemic/antiatherosclerotic activity of certain plant materials.* Rajasthan. Prof. V.P. Dixit

9. Markandey, Rachna. *Some observations on the ecology of Zebrotes subfasciatus (Boheman) Bruchidae : Coleoptera).* Panjab.

10. Misra, Saryoo Saran. *Studies on the control of green peach aphid, Myzus persicae Sulzer on potato crop with systemic insecticides and assessment of their residues in potatoes.* HP.

11. Neogi, Lakshminarayan. *Haematological and cytological studies on S-180 tumour-bearing mice in response to drug therapy.* Burdwan Dr. Samar Chakraborti.

12. Patel, M.I. *Ecological studies on the feral pigeons in a tropical urban area.* Saurashtra, Dr R.M. Naik.

13. Rosy, P.A. *Studies on the weaver ant Oceophylla smaragdina Fabricius (Hymnoptera : Formicidae) of India.* Calicut Dr. T.O. Narendran.

14. Rukmini, Chatti. *Some aspects of ecology of helminth parasites of the larvivorous fish, Aplocheilus panchax Hamilton* Andhra.

15. Saha, Anil Kumar. *Contribution to the study of the comparative morphology of the brain of some hill stream fishes. of North-East India in relation to feeding habit and habitat* Calcutta.

16. Sashadhar Nath. *The fish and fisheries of the Barak River system in Assam, India with special reference to the ecomorphology and distribution of its ichthyofauna.* Gauhati. Dr. S.C. Dey.

17. Sharma, Nutan. *Evaluation of certain plant products for fertility regulation in female albino rates.* Rajasthan. Dr. V.P. Dixit and Dr. D.K. Vyas.

18. Soni, Inderpal. *Teratological studies of phosphamidon : An organophosphate insecticide in Swiss albino mice.* Rajasthan. Dr. Pradeep Bhatnagar.

19. Upender, M. *Studies on some biochemical and histochemical aspects of a fowl parasite, Raillietina echinobothrida.* Osmania.

20. Yadwad, Veerarajendra Basavaraj. *Effect of fenitrothion (0, 0, dimethyl-0-(3-methyl-4-nitrophenyl) phosphorothioate) on the physiology of the castor semilooper, Achaea janata (L).* Karnatak. Dr. V.L. Kallapur.

Medical Science

1. Bhattacharyya, Amitabha. *Studies on spermatozoal membrane properties during maturation.* Calcutta.

2. Dave, Kirtikumar Indrakumar. *A study of certain biochemical components in the viscera of aborted fetuses at various gestational ages and at still-birth.* Baroda.

3. Ghosh, Anantakumar. *Some aspects of studies on antileishmanial compounds.* Calcutta.

4. Gowthamnath, B. *Pineal activity and aging : A study directed to the effects of (a) stressors and (b) sex steroids.* Madurai.

5. Pandya, Dineshchandra Chandulal. *Anti-ulcer activity of Tamra Bhasma.* Baroda.

6. Pasnani, Jyoti Shantilal. *Studies on antihypertensive effect of indapamide.* Baroda.

7. Ramana Murthy, Kolapalli Venkata. *Bio-pharmaceutical studies on nitrofurantain microcapsules and their application as controlled drug release dosage forms.* Andhra.

Veterinary Science

1. Abichandani, Harish Topandas. *Heat transfer correlations for mechanically formed thin film heat exchangers.* Kurukshetra.

2. Agrawal, Ram Gopal. *Some studies on uterine torsion with special reference to its etiology and treatment in buffaloes.* PAU.

3. Aravindan Gnanakan, R. *Effect of restricted and ad lib water intake on physiological reactions, haematological change and energetic efficiency of milk production in crossbred cows.* Kurukshetra.

4 Balaraman, N. *Studies on different levels of aflatoxins in ruminant diets, their effects on gamma-globulins in neonatals and their influence on certain metabolic enzymes.* Kurukshetra.

5. Chawla, Anil Kumar *Certain technological parameters for commercial production of Yoghurt.* Kurukshetra.

6. Fulzele Rajeshwar. *Multi dimensional analysis of training programme of Krishi Vigyan Kendra* Kurukshetra.

7. Mohamed Nagib El-Sayed Ahmed El-Arian *Genetic analysis of murrah buffalo herds.* Kurukshetra.

8. Palta, Prabhat. *Hypophysial gonadotropic and ovulatory responses to the hypothalamic hormone GhRH in buffaloes.* Kurukshetra.

9. Punia, Balbir Singh. *Influence of dietary energy sources on ruminal VFA production rates and nitrogen utilisation in cattle and buffaloes.* Kurukshetra.

10. Ravinder Singh. *Selection of optimum combinations of early traits for maximising genetic improvement in dairy cattle.* Kurukshetra.

11. Roy, Pranab Kumar *Optimisation of production efficiency in crossbred cattle through systems analysis.* Kurukshetra.

12. Sahani, Mohan Singh. *Studies on pre and post weaning body weights, growth, survival and fleece weight in native, (Nali and Chokla) exotic fine wool breeds (Rambouillet and Russian Merino) and their first crosses* Kurukshetra.

13. Sanhotra, Manpal Kaur *Studies on buffalo milk xanthine oxidase and its possible role in development of atherosclerosis.* Kurukshetra.

14. Shive Kumar. *Preservation of raw milk by lactoperoxidase/thiocyanate system and its utilization for the manufacture of selected dairy products.* Kurukshetra.

15. Thompkinson, Dilip Kumar. *Technological aspects of incorporating vegetable oils for infant food formulations.* Kurukshetra.

Indira Gandhi National Open University

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Applications are invited from Indian Citizens for filling up the following posts of Lecturers in the Indira Gandhi National Open University :

Lecturers : History, Economics, Politica Science, Public Administration, Psychology, Computer Science, Physics, Chemistry, Life Sciences, Geography, Library & Information Sciences, Education and Performing Arts.

Qualifications

I Other than Computer Science

Essential: Master's degree in the relevant subject with at least 55% marks or its equivalent grade and good academic record or an equivalent degree from a foreign University.

Desirable: A Doctor's degree in the relevant subject or research work of an equally high order.

II. Computer Science

Essential: (a) Master's degree in the relevant subject from an Indian University with at least 55% marks or its equivalent grade and good academic record or equivalent degree from a foreign University.

OR

(a) Master's degree in Computer Science or Master's degree in any discipline with a Diploma in Computer Science or a Bachelor of Engineering in Computer Science/Electronics and Telecommunications;

(b) A minimum of 2 years experience in Computer Systems Development, Computer Programming and conducting Training Programmes in Computer Science/ Data Communications.

Desirable : (a) Doctoral Degree or research work of an equally high order.

OR

(b) At least 3-4 years experience in Computer programming, Software Engineering, performance evaluation, office management, computer graphics, excellent oral and written communication ability with practical experience in a computer centre.

Eligibility

Only those candidates who, besides fulfilling the minimum academic qualifications in the above, have qualified in a comprehensive test to be conducted by the University for the purpose will be eligible for consideration for appointment as Lecturer.

The details of the comprehensive test as well as places at which such tests would be conducted would be intimated to the candidates at least a month in advance.

Additional Qualification : Experience and proven ability in imparting education through communication media and innovations in distance teaching methods and materials.

Job Requirement · Academic staff of this University will have the following responsibilities:

1. Curriculum and Course Development
2. Preparation of self instructional print material
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Scale of Pay: Rs. 2200-75-2800-100-4000 plus usual allowances as admissible under the University rules.

In addition to pay, the posts carry all allowances as per University rules. Higher start in the prescribed scale may be given in deserving cases on the recommendation of the Selection Committee. In a few cases, the University would be able to provide accommodation. Provident Fund/Pension, Gratuity, Leave Travel Concession, Medical re-imbursement and leave will be admissible as may be approved by the University

The prescribed application forms can be had from the Registrar, Indira Ghandhi National Open University, YMCA Cultural Centre, Jai Singh Road, New Delhi-110001, on a written request by post and accompanied by a self-addressed envelope (size 13cms x 28 cms) bearing postage stamps of Re. 1.00. Completed application forms alongwith attested copies of degrees, other certificates, mark-sheets, published research articles, experience etc. should reach the Registrar at the above address on or before **2nd November, 1987.** The originals of the above degrees/certificates should be produced at the time of interview.

Some posts of Lecturers are reserved for Scheduled Castes/Scheduled Tribe candidates as per rules If no suitable candidate is found from SC/ST categories, the posts will be treated as un-reserved and seletion will be made from general candidates.

Candidates called for interview from outside Delhi will be paid single class railway fare to and fro by the shortest route from their place of residence/work.

Canvassing in any form by or on behalf of a candidate will be a disqualification.

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(2) At least 15 years experience in two or more of the following fields :

(a) Teaching at an institute of University Standard.

(b) Research in a recognised institution or Organisation.

(c) Industry including Govt. departments in a Senior Executive position.

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(2) Experience in curriculum development, administration and planning of Technical Institution at degree and post-graduate level.

(3) Published work of high standard.

(4) Membership of professional bodies.

Age : Not more than 50 years on 1st January, 1987.

Maximum age limit in case of candidates of Outstanding merit is relaxable to 55 years.

Candidates may have to appear for an interview at Gauhati/Silchar or Calcutta for which first class Railway fare by the shortest route will be reimbursed by the College on production of money receipt.

Five (5) copies of applications with full bio-data with date of birth, academic qualifications and professional experience alongwith a crossed Postal Order of 10/- (Rupees five only for the candidates belonging to Schedule Caste/Schedule Tribe/Backward communities etc.) in favour of the Principal, Regional Engg. College, Silchar should reach the undersigned on or before 31st October '87.

Candidates already in service should send their applications through their present employer or submit 'No Objection Certificate' from their employer before or at the time of interview.

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Requires

Senior Scientific Officer in the Project Education and Research in Computer Networking. (The duration of the project is upto 30-6-1990)

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Emoluments : Rs. 2,965/- p.m. (approx.) in the Scale Rs. 1100-1600. Grade is likely to have upward revision when the IV Pay Commission recommendation becomes effective. Details and prescribed application forms can be obtained on request accompanied by a crossed postal order for Rs. 5/- (free of cost to SC/ST on production of Caste Certificate from a competent authority) drawn in favour of Registrar, Indian Institute of Science, Bangalore-560 012 towards the cost of application forms alongwith a self-addressed stamped (Rs. 5-40) envelope of the size 28 x 18cms. **on or before 21-10-1987.**

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(i) Engineering :

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(iii) Humanities and Social Sciences.

(iv) Interdisciplinary areas :
Corrosion Science and Engineering, Energy Systems Engineering, Environmental Science and Engineering, Industrial Engineering and Operations Research, Industrial Management, Materials Science, Reliability Engineering, Systems and Control Engineering.

Minimum Qualifications for Admission

1. Engineering Departments and Interdisciplinary Groups

M.E./M Tech./M.Sc. (Engg.) or equivalent degree or B.Sc. (Engg.)/B.E./B Tech./M Sc. or equivalent degree with a minimum of 60% marks (or equivalent grade) in the qualifying examination.

2. Science Departments

M.Sc./M.A. or B.E./B.Tech./B.Sc. (Engg.) in the appropriate or allied branch of science or engineering with a minimum of 60% marks (or equivalent grade) in the qualifying examination.

3. Humanities and Social Sciences Department

M.A./M.Sc./B.Tech in the appropriate or allied field with a minimum of 60% marks (or equivalent grade) in the qualifying examination. However, in case of candidates with M.A. in arts subjects, the minimum percentage of marks in the qualifying examination has been relaxed to 55%.

Note : Additional admission criteria

Additional admission criteria for Bachelor's degree in Engg./Technology and Master's degree holders in Science, Humanities and Social Sciences :

Candidates possessing Bachelor's degree in Engineering or Technology should have a valid GATE score.

Candidates with Master's degree in Science and Arts should have qualified in the GATE/UGC/CSIR Examination.

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The Institute has also facilities for external registration of sponsored candidates. Such candidates are expected to carry out their research work in their parent organization after fulfilling certain pre-requisites in the Institute. They should however, possess the minimum academic qualifications prescribed for the regular candidates. Since these candidates will not be eligible to receive the Institute's research scholarship, they need not fulfil the additional admission criteria prescribed for regular candidates.

Mode of Admission

Candidates for admission to the Ph.D. programmes will have to appear for an interview at IIT during the third week of December, 1987. In the case of candidates with B.Tech. or equivalent qualification, a written test may also be held in addition to the interview.

Second class fare by the shortest route from the place of residence to Institute and back will be paid only to those candidates who, after appearing for the interview, are selected for Ph.D. and finally join the programme. Sponsored candidates including candidates for external registration are not eligible for any TA claim.

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Scholarships are awarded as follows :

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Seats are reserved for candidates belonging to Scheduled Castes/Scheduled Tribes as per rules applicable for such category of students.

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These can be obtained from the Asstt. Registrar (Academic) by enclosing a self addressed stamped (for Rs. 2.20) envelope of size about 27 cm x 12 cm and superscribed, 'APPLICATION FORM FOR ADMISSION TO Ph.D.' alongwith a crossed postal order or bank draft of the value of Rs. 10/- payable to Indian Institute of Technology, Bombay.

Last date for supply of Application Forms (by post)	**9.11.1987**
Last date for receipt of completed Applications	**16.11.1987**

Candidates who have appeared for corresponding qualifying examinations but whose results are not declared yet are also eligible to apply.

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SAMPURNANAND SANSKRIT VISHWAVIDYALAYA, VARANASI

Advertisement No. 6/1987

Applications are invited for the following posts. The application on the prescribed forms should reach the Registrar, Sampurnanand Sanskrit Vishwavidyalaya, Varanasi-221002, latest by Nov. 10, 1987. Application forms will be sold from Oct. 9, 1987.

(A) Professor : Grade Rs. 1500-60-1800-100-2000-125/2-2500 (1)—Bauddha Darshana (2) Prachina Rajshastra-Arthshastra (3) Darshana (4) Nyaya and (5) Prachina Vyakarana (Tempy.) (one post for each subject)

(B) Reader : Grade Rs 1200-50-1300-60-1900 (1) Bhasha Vigyan (Structural Linguistics), (2) Jyotisha (Khagol Shastra) and (3) Sahitya. (one post for each).

(C) Lecturer : Grade Rs. 700-40-1100-50-1600 (1) Tulanatmak-Dharma-Darshana (with Specialisation in Western Philosophy) (2) Library Science (3) Pali (4) Sahitya (5) Puranetihasa (6) Archaeology (with specialisation in Epigraphy) (7) Dharma-Shastra (8) Navya Vyakarana (9) Purya-Mimamsa (Tempy.) (10) German (Tempy. likely to continue); and (11) Shaivagama (Tempy.) (Two posts in Sahitya and Puranetihasa and rest one post each subject).

(D) Librarian : One Post : Grade : Rs. 1200-1900

(E) Dy. Librarian : Two Posts : Grad : Rs. 690-1420

(F) Senior Fellow : Yogatantra—One Post : Grade : Rs. 515-86.

Minimum Qualifications for the Post of Professor. (1) Either Eminent Scholar with published work of High quality, actively engaged in research and Ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

(2) Outstanding scholar with established reputation who has made significant contribution to knowledge.

Minimum qualifications for the post of Reader : (1) Good academic record with Doctorate degree or equivalent published work, and active engagement in research or innovation in teaching methods or production of teaching materials, and (2) Five years experience of teaching or research including at least three years as Lecturer or in an equivalent position.

Provided that the requirement contained in clause (2) may be relaxed in the case of a candidate, who in the opinion of the Selection Committee has outstanding research work to his credit.

Minimum Qualification for the Post of Lecturer

1 (a) Doctorate Degree or Research work of an equally high standard in relevant subject; and

(b) Consistently good academic record with first or high second class Master's degree, or an equivalent degree of a foreign University in a relevant subject.

(2) If the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in sub-clause (b) of clause (1)

(3) Where no candidate possessing Doctorate degree or equivalent research work is available or is considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory or organisation, on the condition that he obtains a Doctorate or gives evidence of research work of equivalent high standard within five years of his appointment, failing which he shall not be able to earn furture increments until he fulfils the requirements.

4(a) Marks above the mid-point between the minimum percentage of marks fixed by the University for award of first and second divisions are said to be high second class marks, (b) A candidate having obtained either an average of 55 percent marks in the two examinations prior to Master's degree that is to say Intermediate and Bachelor's Degree Examinations, (irrespective of the marks obtained in any of the two examinations), or 50 per cent marks in each of the two examinations separately, is said to have consistently good academic record.

Librarian : Essential Qualifications—(1) First or second class graduate degree with first/second class Master's degree in Library Science (two years course) or First or Second class Post-graduate degree with First/Second class Bachelor's degree in Library Science (one year degree). (2) At least 10 years experience of editing Manuscripts or practical working experience in some responsible professional capacity in a library of repute. (3) Approved research work experience of working on specific project.

Note : Candidates with Vidyavaridhi/Ph.D. degree will be preferred.

Desirable : (1) Knowledge of English and Hindi (2) Experience of editing Manuscripts (3) Knowledge of Ancient Indian scripts (4) Experience of guiding research work in Sanskrit Literature; and (5) M.A. degree in Sanskrit or Pali or Prakrit.

Age Limit : Between 40 and 55 years on 10.11.1987.

Senior Fellow-Yogatantra : Essential qualifications—(1) First or Second class Acharya in Yogatantra or allied subject or equivalant degree (2) Vidyavaridhi/Ph.D. degree or experience of translation of critical editorial works (3) Atleast two years teaching experience.

Dy. Librarian : Essential qualifications (1) High class Post-graduate or Acharya or equivalent degree from any recognised University. (2) B. Library Science degree of a recognised Institution (3) Atleast five years working experience in any established Library.

Desirable : (1) Knowledge of Sanskrit and Hindi, and (2) Knowledge of Ancient Indian scripts.

Prescribed application forms can be obtained by sending a request to Registrar, Sampurnanand Sanskrit Vishwavidyalaya, Varanasi-221002, along with a self addressed envelope size 23 x 10 cms. and stamp worth Rs. 5.10 accompanied by Bank Draft for Rs 10/- in favour of the Finance Officer of the Vishwavidyalaya or on cash payment of Rs. 10/- at the cash counter of the University. In case of permanent posts, probation period in the first instance shall be one year which may be extended for a period not exceeding one year. Reservation of the seats for S.C./S.T. stands as prescribed.

All applications must be accompanied by attested Photostat copies of the degree/certificates and Marksheets. Applications incomplete in any respect will not be entertained for consideration. Those who are in service should apply through proper channel. I.P.O./MO. are not acceptable.

Note : Those who have already applied against advertisement No. 1 and 4 of 1986 need not apply again.

Gyan Bajpai
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Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055, Tel. 529157